

Features

- 4 x 2 x 1 Inches Form factor
- 225 Watts with Forced Air Cooling
- 7 Year Extended Warranty Option
- Efficiencies upto 94%
- -40 to 70 degree operating temperature*
- Dual fusing
- 12V / 0.5A Fan Output, Thermal Shut-Down feature
- 3.37m Hours, Telcordia -SR332-issue 3 MTBF
- Standby Power < 0.5W
- Medical (BF) Safety Approvals
- Meets standard IEC60601-1-2 : 2014 (4th Edition)

Electrical Specifications

Input Voltage	85-264 VAC/390 VDC, Universal (Derate from 100% at 100V AC to 95% at 85V AC)	
Input Frequency	47-63 Hz	
Input Current	115 VAC: 2.2 A max.	230 VAC: 1.1 A max.
No Load Power	less than 0.5W typical	
Inrush Current	115 VAC – 25 A, 230 VAC – 45 A, 264 VAC – 75 A	
Leakage Current	300 uA Typical, (N.A. For Class II Option)	Touch current <100uA
Efficiency	94%(48V), 93%(24V,30V), 92%(12V,15V)	
Hold-up Time	at 225W:10 ms ; 110W: 16 ms	
Power Factor	exceeds 0.95 with Full Load	
Output Power	225W with 13 CFM, upto 120W Convection	
Line Regulation	+/-0.5%	
Load Regulation	+/-0.5%	
Transient Response	25% step load change, at 0.1A/uS slew rate, 50% duty cycle, 50Hz=4% , recovery time < 5 ms	
Rise Time	55ms typical	
Set Point Tolerance	+/-1%	
Output Voltage Adjustment	+/-3% (Ref. Note 9)	
Over Current Protection	>110%	
Over Voltage Protection	110 to 140%	
Short Circuit Protection	Hiccup mode	
Switching Frequency	PFC – 70 to 130 KHz ,PWM – 50-80 KHz	
Operating Temperature ⁴	- 40 to +70°C, * -40 to 0°C startup is guaranteed with spec deviation	
Storage Temperature	-40 to +85°C	
Relative Humidity	5% to 95%, noncondensing	
Altitude	Operating: 16,000 ft.; Nonoperating: 40,000 ft.	
MTBF	3.37m Hours, Telcordia -SR332-issue 3	
Isolation Voltage	Input to Output – 4000 VAC medical applications. Input to GND - 1500 VAC (Not Applicable For Class II Option) Output to GND- 1500VAC for type BF , 500 VAC for type B (Not Applicable For Class II Option)	
Cooling	225W with 13 CFM forced air cooling ⁶ (refer Mechanical Drawing) upto 120W with natural convection cooling ⁶ (refer Derating Curve)	

Model Number	Description	Voltage	Max. Load (Convection) (112.5W)	Max. Load (Convection) (120W)	Max. Load (13 CFM)	Min. Load	Ripple ¹
LFMWLP225-1001	with Screw Terminal	12 V	9.37A	10.0A	18.75A	0.0 A	1%
LFMWLP225-1301	with Molex Connector	12 V	9.37A	10.0A	18.75A	0.0 A	1%
LFMWLP225-1002	with Screw Terminal	15 V	7.5A	8.0A	15A	0.0 A	1%
LFMWLP225-1302	with Molex Connector	15 V	7.5A	8.0A	15A	0.0 A	1%
LFMWLP225-1003	with Screw Terminal	24 V	4.68A	5.0A	9.37A	0.0 A	1%
LFMWLP225-1303	with Molex Connector	24 V	4.68A	5.0A	9.37A	0.0 A	1%
LFMWLP225-1004	with Screw Terminal	48 V	2.34A	2.5A	4.68A	0.0 A	1%
LFMWLP225-1304	with Molex Connector	48 V	2.34A	2.5A	4.68A	0.0 A	1%
LFMWLP225-1005	with Screw Terminal	30 V	3.75A	4.0A	7.5A	0.0 A	1%
LFMWLP225-1305	with Molex Connector	30 V	3.75A	4.0A	7.5A	0.0 A	1%
LFMWLP225-1006	with Screw Terminal	58 V	1.94A	2.07A	3.88A	0.0 A	1%
LFMWLP225-1306	with Molex Connector	58 V	1.94A	2.07A	3.88A	0.0 A	1%
LFWLP225-CK metal cover kit accessory							
To order the extended warranty product please add the suffix –EX to your required part number For Example - MWLP225-1001-EX (See Note 8)							

Connectors		
J1	Pin 1	AC LINE
	Pin 2	NOT FITTED
	Pin 3	AC NEUTRAL
J2 Option 1 & 2	Pin 1,2,3	V1 +VE
	Pin 4,5,6	V1 -VE
J3	Pin 1	FAN +VE
	Pin 2	FAN -VE

Notes

- Ripple is peak to peak with 20 MHz bandwidth and 10 μ F (Tantalum capacitor) in parallel with a 0.1 μ F capacitor at rated line voltage and load ranges.
- Class II means without input Earth pin. Ensure non-metallic mounting stud when installing a class II product. Please add suffix –II to the model number to order a class II version of the same product. For eg MWLP225-1001-II will be a class II version of 12V.
- Combined output power of main output, fan supply shall not exceed max. Power rating.
- Fan supply output voltage tolerance including set point accuracy, line and load regulation is +/-10% and Ripple and noise is less than 10%.
- Specifications are for nominal input voltage, 25°C unless otherwise stated.
- 225W with 13CFM forced air cooling and 120W with natural convection cooling at 100 to 264VAC.
- Output ripple can be more than 10% of the output voltage.
- The extended warranty period is 7 years from the date of manufacture and will continue for 6 months thereafter to allow for transport and stock holding prior to end customer receipt. The extended warranty is a “return to base” warranty and does not imply a guarantee of 7 year operation. The standard EOS warranty T&C’s apply for the extended warranty period. Refer to your local EOS representative for further details.
- Adjustment potentiometer is located on the SMT side of the PCB.
- When used in Cover Kit, de-rate output power to 70 % under all operating conditions



Innovations in Power

Mechanical Specifications

AC Input Connector (J1)	Molex: 26-60-4030 Mating: 09-50-3031; Pins: 08-50-0106
DC Output Connector (J2) Option 1 (Screw Terminal)	Molex: 39357 Series or equivalent
DC Output Connector (J2) (Molex Connector)	Molex: 26-60-4060 Mating: 09-50-3061; Pins: 08-50-0106
Aux (Fan) Output(J3)	AMP :640456-2 Mating: 640440-2
Dimensions	4 x 2 x 1 inches (101.60 x 50.8x 25.4 mm)
Weight	200 gm approx

EMC

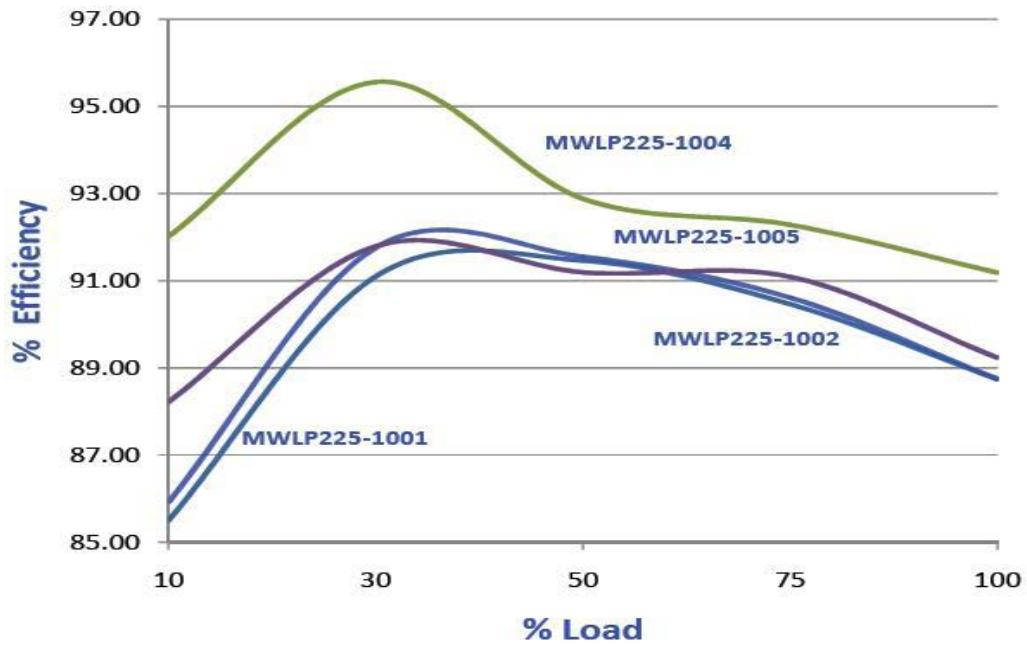
Parameter	Conditions/Description	Criteria
Conducted Emissions	EN 55011-B,CISPR22-B, FCC PART15-B	Pass
Radiated Emissions	EN 55011 A	Pass
		Level B with external core (King core K5B RC 25x12x15-M in input cable)
Input Current Harmonics	EN 61000-3-2	Class D
Voltage Fluctuation and Flicker	EN 61000-3-3	Pass
ESD Immunity	EN 61000-4-2	Level 4, Criterion A
Radiated Field Immunity	EN 61000-4-3	Level 3, Criterion A
Electrical Fast Transient Immunity	EN 61000-4-4	Level 3, Criterion A
Surge Immunity	EN 61000-4-5	Level 3, Criterion A
Conducted Immunity	EN 61000-4-6	Level 3, Criterion A
Magnetic Field Immunity	EN 61000-4-8	Level 4, Criterion A
Voltage dips, interruptions	EN 61000-4-11	Criterion B

Safety

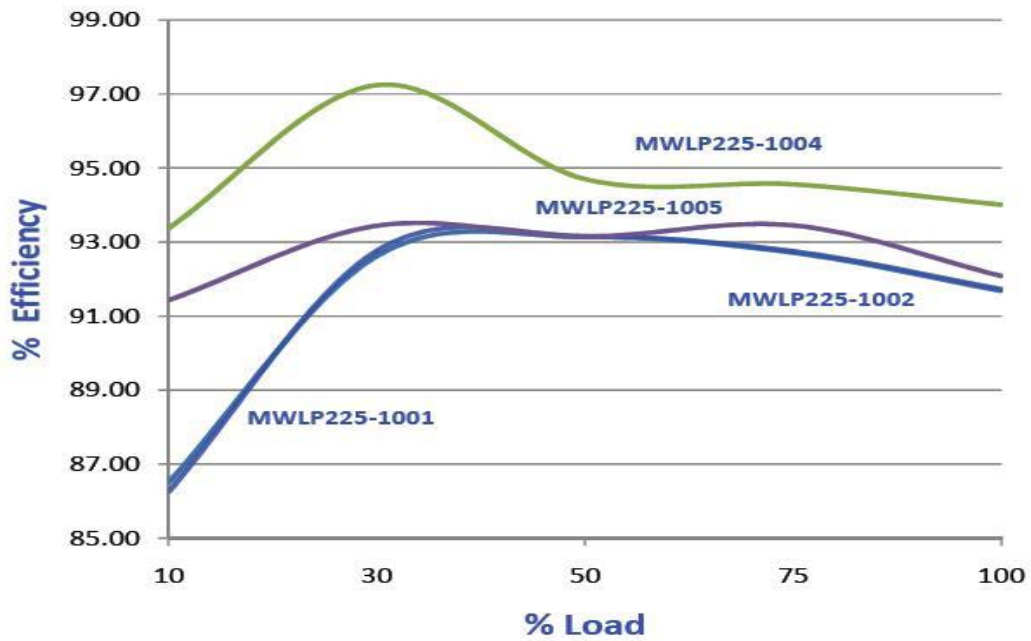
CE Mark	Complies with LVD Directive
Approval Agency	Nemko, UL, C-UL
Safety Standard(s)	EN60601-1, IEC 60601-1 (ed.3), ANSI / AAMI ES 60601 - 1, CSA C22.2 No. 60601-1
Safety File Number(s)	Class-I : UL: Certificate Number 20141230-E173812, Nemko: Certificate No. P14219157, CB Certif. No.:N083948 Class-II : UL: Certificate Number 20141230-E173812, NEMKO: Certificate No. P14219181, CB Certif. No. N084076

Efficiency Graph

MWLP225-100X efficiency graph at 115V AC



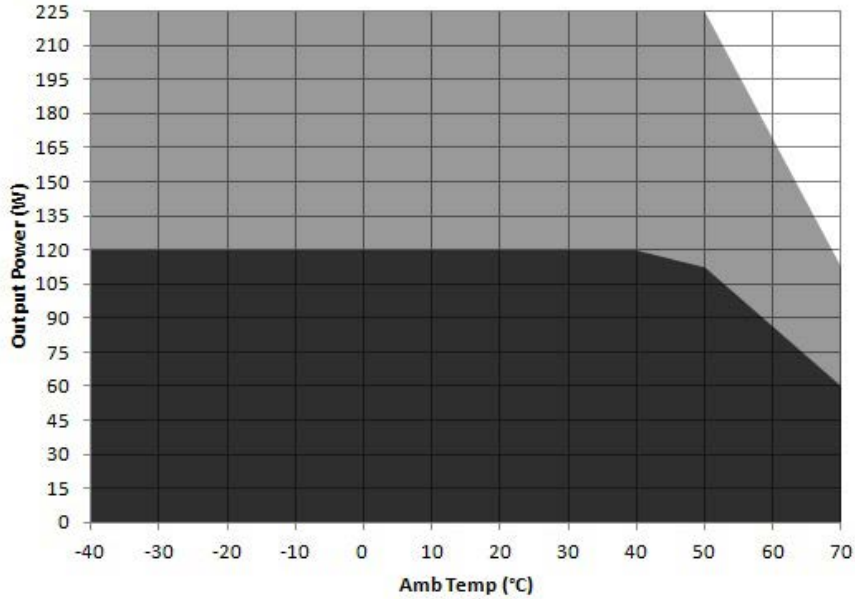
MWLP225-100X efficiency graph at 230V AC



Innovations in Power

Derating Curve

Power de-rating

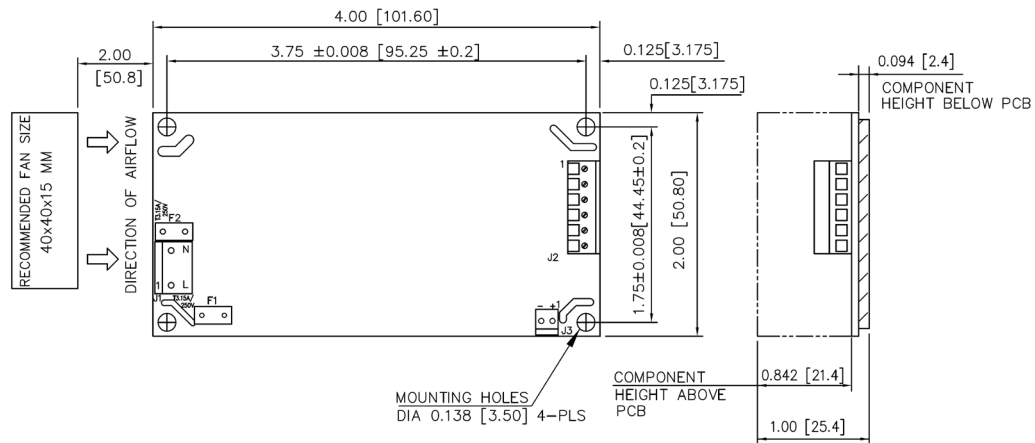


Convection load: 120W UP TO 40 °C
De-rate between 40-50 °C @ 0.625% per °C
De-rate above 50 °C @ 2.33% per °C

Forced air cooled load : 225W up to 50°C
De-rate above 50 °C @ 2.5% per °C

Mechanical Drawing

Option 1



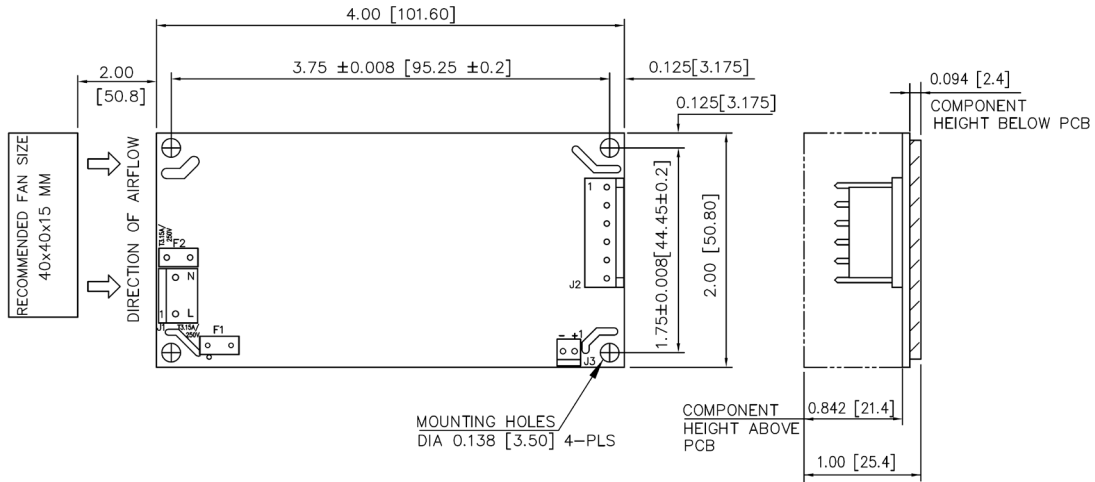
MECHANICAL OUTLINE DIMENSIONS
ALL DIMENSIONS ARE IN INCHES[MM]
GEN TOLERANCE : +/-0.04 [+/-1.0MM]

Notes: In case the PCB is mounted in a metal enclosure, using metal hardware ensure the following

1. Stand off, used to mount PCB has OD of 5.4 mm max.
2. Screws, used to fix PCB on stand off, have head dia of 6.0 mm max.
3. Washer, if used, to have dia of 6.5 mm max.

Mechanical Drawing

Option 2



MECHANICAL OUTLINE DIMENSIONS
 ALL DIMENSIONS ARE IN INCHES[MM]
 GEN TOLERANCE : +/-0.04[+/-1.0MM]

Notes: In case the PCB is mounted in a metal enclosure, using metal hardware ensure the following

1. Stand off, used to mount PCB has OD of 5.4 mm max.
2. Screws, used to fix PCB on stand off, have head dia of 6.0 mm max.
3. Washer, if used, to have dia of 6.5 mm max.